ENGINEERING NEWS-RECORD

SEPTEMBER 23, 1948

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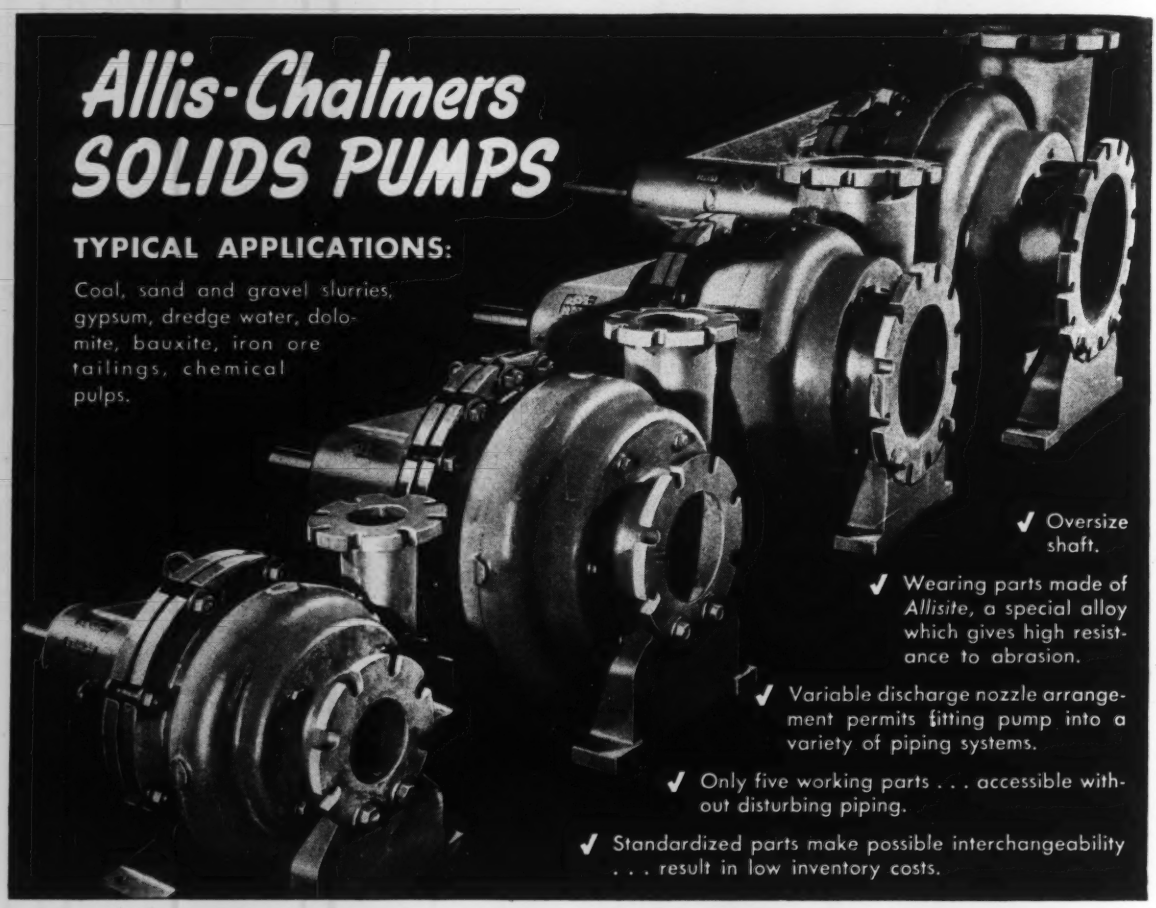
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ENR

THE CONSTRUCTION WEEK

DIM FUTURE—Engineers may well ponder the implications of scientist speeches at the centenary meeting last week of the American Association for the Advancement of Science. There just is not arable land enough to support and feed the population at its current rate of increase, say the scientists, adding that we are also wasting most of what we have. Scientists, before this, have claimed that the future would be brighter if river control thinking more fully encompassed erosion control on the small tributaries, and if more thought were given to saving sewage and chemical wastes for soil-building. The broad implication is that civil engineers could do a better job in conserving our natural resources.

●

BAY BRIDGE VERDICT—Decision on one or more new San Francisco Bay Crossings is expected around the end of the year—possibly even before Christmas. The timetable is this: The California Department of Public Works, Bay Toll Crossings Division, will make a report in October to the Toll Bridge Authority. This will be based on feasibility studies and cost analyses of the two crossings under consideration (1) the southern causeway and tunnel, recommended by an Army-Navy board in 1946, and (2) a bridge parallel to the existing one. Because of the limited available revenue bond money, odds are on only one crossing being okayed at this time, and most betting is on the bridge. In November, the Toll Bridge Authority will hold a public hearing on the project, then will make the decision. Next, in order, plans will be drawn, the existing bridge will be refinanced, new bonds sold, and construction contracts let. If all goes smoothly, the job could be under way early in 1950.

●

DIPLOMATS ENTER POWER PICTURE—The U. S. State Department has entered the popular Washington game of settling national power matters. Its pitch is to hold up delivery of the New York State-Ontario St. Lawrence River power application (ENR July 29, p. 17) to the International Joint Commission. State entered the picture after New York had received Federal Power Commission approval of the plan—State being the official transmittal agency between FPC and the joint commission. State has chosen to handle the matter as if it were an offer by Russia to buy the Panama Canal—it is clearing the application with other departments, including Army, Interior and Commerce. This is within the State Department prerogative—but it has stirred a lot of speculation, since FPC is doing the same thing as a matter of routine. Conjecture in Washington is: (1) the delay is simply State's notorious inability to do anything quickly; (2) the department is taking a timid view of the proposal, in view of Congress' record of rejections of the project; and (3) that U. S. coal and railroad interests—avowed opponents of the project—have applied a finger of caution.

●

HIGHWAY ENGINEERS NEEDED—As evidenced by recent surveys (ENR Sept. 9, p. 1) top highway officials look to the failure of recent civil engineering graduates to enter the highway field as one of their most crucial problems. In California, despite a starting salary of $310 a month for civil engineering graduates, none of the 1948 graduates of the state university went to work for the Division of Highways. Making the lack of recruits more serious is the fact that most of the division's top men will be up for retirement in the next 5 to 10 years. To combat this lack of interest, the California legislature has appropriated $355,000 to found a school of transportation at the University of California, with jobs guaranteed for 50 or more graduates each year.

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FAMILIES AND HOUSES—A sidelight on the continued pressure for new housing is given by Census Bureau figures showing that from January, 1941, to December, 1947, more than 4,000,000 new family units were formed, 1,000,000 of them in 1947. In the same seven-year period, about 400,000 families migrated from farms to cities. Under these pressures, the average cost for single family homes has risen to $10,700 during 1948 (from $9,300 in 1947), according to the Bureau of Labor Statistics, whose estimate of more than 950,000 housing starts for the current year, however, is apparently yet unaffected by these increasing costs.

●

TUNNEL WON'T FLOAT—The "floating" tunnel across Puget Sound, described by Chas. E. Andrew at the recent ASCE convention in Seattle will probably never be built. Reason: state politicians have seized upon the proposal as a lever to force the privately-owned ferry system crossing the sound either to sell out to the state or improve its facilities. In either case better ferry service would slow the tunnel project, even before its engineering problems could be worked out—which is too bad since the job would involve anchoring twin two-lane highway tubes of reinforced concrete 50 ft. below the surface of the sound, at a location where the water is 800 to 1,000 ft. deep.

●

MERGER—Chances of a national model building code being promulgated in the foreseeable future brightened considerably when the Pacific Coast Building Officials Conference and the Building Officials Conference of America joined forces last week to set up a super-organization—the American Society of Building Officials. Observers believe that one or the other of the conferences will give up its own code in favor of a national standard. The Building Officials Foundation, a central clearing house for test data set up by the BOCA, is also expected to benefit, since the scope of its activity has been more than doubled by the union. This last is of considerable importance to manufacturers of building materials and equipment because the purpose of the BOF is to stamp a seal of approval on items satisfying the model code.

●

OVERSEAS SURPLUS—Look for what's left of overseas surplus construction equipment to be put on the permissible reimport list soon. New regulations are being drafted that will virtually wipe out the ban previously existing. Since most of the good machines, however, have long since been bought by foreign governments, those that do come in will not create much of a stir. A few items may have sifted down to speculators, who will now export them, and the remainder will come from war surplus depots in Germany.

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NEWS BRIEFS

Highways—It has cost *Kentucky* $5,000,000 this year to repair 924 miles of winter-damaged roads . . . C. F. Lytle Co. of Sioux City, Iowa, and the Green Construction Co. of Des Moines were recently given a $4,000,000 contract for 28 miles of PRA highway in *Alaska* . . . Ohio has approved a joint city-state-federal program for $2,000,000 worth of street improvements in *Toledo* for 1949 . . . Common council of *Batavia, N. Y.*, has tentatively accepted a program for a $1,500,000 arterial highway, including widening of streets and a new route through the city to connect with the new state thruway.

Housing—Bell Park Gardens in *Queens County, N. Y.*, will cost $8,240,000 and include 800 units. FHA insurance has been requested. . . . *John* Merriam, of *Philadelphia*, will build a $1,000,000 apartment development at *Wynnewood, Pa.* . . . Low bidder on *Boston's* 972-unit, three-story housing project on Broadway at B Street was the John Bowen Co. with a $11,989,000 bid. . . . F. A. Coleman of *Trenton* will build houses at *Mercerville, N. J.*, to total $1,335,000 in cost.

Public Construction — *Tennessee* State Funding Board has authorized a $12,000,000 bond issue for state buildings, including $2,000,000 for the University of Tennessee, and $4,500,000 for other educational improvements. The university plans an atomic energy research building, a laboratory and a 550-bed hospital for atomic medicine. . . . The proposed $20,000,000 veterans' neuropsychiatric hospital at *Gainesville, Fla.*, will contain 24 streamlined buildings. . . . Eight national conservation and wild-life groups have filed with the Black River Regulating Board in *Watertown, N. Y.*, protesting against the proposed Panther Dam in the Adirondacks.

Industrial Construction—Lone Star Gas Co. has begun construction of a 70-mile, $3,500,000 pipe line to bring more gas to *Dallas, Tex.* . . . 12 luxury hotels to cost $10,000,000 are now under construction at *Miami Beach, Fla.* . . . Pacific Gas and Electric Co. will build a 402,000 hp. steam electric plant near *Oakland, Calif.* . . . Pesco Products division of Borg-Warner Corp. will build a $2,650,000 plant and laboratory in *Bedford Township, Ohio* . . . Austin Co. has the contract for a $1,500,000 box plant for the St. Joe Paper Co. at *Houston, Tex.* . . . Mutual Realty Corp. has plans for a $1,500,000 shopping center in E. Washington street, *Indianapolis, Ind.*

Sewers and Water Supply—Plans for more than 30 *Kentucky* sewage disposal systems are being considered by the State Health board . . . Nussbaumer & Clark, Buffalo, N. Y., engineers, have started a cost study of the proposed plan of *Elmira, N. Y.*, to take over sewage disposal for five nearby towns and villages . . . Contracts of $984,508 have been let for the expansion of the water system of *Durham, N. C.* . . . About $2,000,000 in contracts have already been let on the storm sewer project in the town of *Tonawanda, N. Y.* One project will require several years and cost $7,000,000 eventually.

Labor—A federal labor commissioner has announced an agreement ending an 11-day building projects work stoppage in the *Lexington, Ky.*, area . . . The strike of 1,100 employees of the Bucyrus-Erie Co.'s *Evansville, Ind.*, plant, members of Local 813, United Electrical Workers, CIO, begun July 30, ended Sept. 9 with no gain for the union . . . The strike of plumbers and steamfitters in *Atlanta, Ga.*, which since July 1 had delayed the completion of numerous buildings and several city and county schools, has been settled, employers acceding to union demands for a $2.50 an hour wage. The previous wage was $2.25 an hour. . . . Carpenters have become so scarce in the *Hartford, Conn.*, area that one large construction company recently sent a representative to Maine to recruit workers. . . . Some 130 asbestos workers on about 50 construction projects in *St. Louis* and *St. Louis County, Mo.*, failed to report for work on Sept. 7 in protest against failure to obtain immediately a 25-cent-an-hour wage increase in their rate of $2.25 an hour.

THE COVER PICTURE

Upon completion of its 1,000-ft. length, this 23-ft. siphon will join the main canal with Bacon Tunnel on the Columbia basin project, south of Coulee City, Wash.

Lathers, in foreground, are putting finishing touches on reinforcing preparatory to moving steel forms forward and pouring the next section of 23-in. thick concrete shell.

Construction on this Bureau of Reclamation project is being done by T. E. Connolly, Inc., of San Francisco, whose $3,494,000 contract also includes the 10,000-ft. Bacon Tunnel, which was holed through recently.

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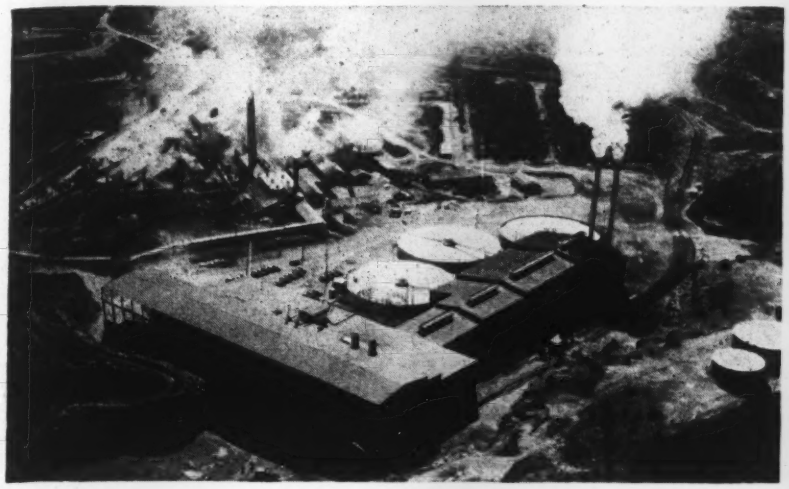

Never-equaled cement production . . .

. . . is no match for record consumption

Waldo G. Bowman

There is a shortage of cement for construction. It could get worse. It is not apt to get better soon. It will certainly not improve unless some of the present buyers drop out of the market or decrease their demands. At intervals next year, an estimated 5,000,000 bbl. of new capacity will come into production, promising some relief.

Emerging from a study of cement production and consumption just completed by *Engineering News-Record* these conclusions stem from some rather unusual facts. One of the most startling is that pigs have played a prominent role in increasing cement consumption. "Dirty as a pig pen" is no longer a justifiable simile. From birth to market day many a modern pig spends his life on a concrete slab, providing only one example—cattle feeding lots, silos, barn floors are others—of the farm use of cement that has grown up almost unnoticed, at least by the construction industry.

This year 30,000,000 bbl. of cement, about fifteen percent of total production, will go to the farmer. His mortgage paid off and money rolling in, he cannot be cataloged among "miscellaneous users" as he was fifteen years ago when he bought only 4 million barrels. Long an object of cement industry promotion, the farmer has finally succumbed—and just in time to add to the producers' troubles with their oldest and biggest customer, the construction industry.

Shift to concrete

Contributing also to the cement shortage for construction is the substitution of cement for steel, brick and lumber, which has continued so long after the wartime emergency period as to raise a question whether there is not perhaps a permanent shift. Concrete blocks, largely a lumber and brick substitute, required 5,000,000 bbl. of cement in 1945. This year over 15,000,000 bbl. will go into blocks.

Steel's position in the picture is sometimes obscured by the high production levels of that industry. When, however, fabricated structural steel shipments are considered—i.e. steel for construction—it is noted that they totaled less than 2,000,000 tons in 1947, as compared with a range from 2,440,000 in 1923 to 3,600,000 in 1929. Both cement and steel reinforcing bar shipments, in contrast, are far above the 1923-29-period.

If one wants other than a statistical picture of this shift in the concrete-structural steel relationship, the 300-ft. span reinforced concrete hangars of the Air Forces at Rapid City, S. D., and Limestone, Me., furnish it. Prewar, they unquestionably would have been of steel.

The 1948 cement consumption pattern is further colored by the boom in housing. Here the concrete block demand is also felt, as well as the use of cement for garage driveways that formerly were of gravel and for concrete floors that used to be wood. The 23,000,000 sq. ft. of concrete house floors laid in 1945, were less than one-fifth of the area laid in 1947. Perhaps as much as 135,000,000 sq. ft. will be laid during the current year.

Exports take larger share

Exports, too, have cut into the domestic supply of cement. Compared with prewar years when maximum shipments never exceeded 1,000,000 bbl. annually,

(*Continued on p.* 10)

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Building organizations unite to form American Society of Building Officials

Convention announces BOCA-PCBOC union, approves basic code and hears charges against manufacturers and contractors

The Pacific Coast Building Officials Conference and the Building Officials Conference of America united last week to form the American Society of Building Officials.

This action was taken at the closing session of the 33rd annual convention of the BOCA in New York City, following approval of this step in July by the PCBOC. Previously, the BOCA had approved an abridged national model building code for cities with nearly all structures under four stories and authorized its executive committee to accept on behalf of the membership the full basic code when completed.

It had also heard George E. Strehan, BOCA's code coordinator, charge that steel manufacturers had acted in concert to influence writers of the code and New York City's mayor, William O'Dwyer, accuse contractors of padding bids on city work.

In the union of the two building officials organizations, each retains its autonomy. The PCBOC will continue to sponsor its uniform building code, at least for the present, and will bring out a revised edition next year. On the other hand the BOCA will push its basic code, which it hopes to complete in about four months and offer immediately to cities for adoption.

Other building officials organizations are being welcomed to join the new society on a similar basis.

It is expected that the merger will not immediately affect the three-year old Building Officials Foundation. This organization had been set up by the BOCA to promote its basic code, establish standard criteria and procedures for testing building materials and act as a central clearing house of test data and their interpretation for the use of building officials in code administration.

The charge against the steel industry came at a joint meeting of the foundation and BOCA. Strehan said that 50 steel manufacturers had protested certain provisions of the basic code following circulation of recommendations by a trade association. Some of these manufacturers, he noted, had previously written to him indorsing the portions of the basic code affecting their industry.

The charge was denied by Bert Wood of the American Iron and Steel Institute, who explained that following its own study and before replying to the BOCA, the AISI had circulated its own recommendations to its members. After the members had received this report, it was only natural, he thought, that some companies had changed their minds concerning provisions indorsed earlier.

Mr. Strehan, after the meeting, said that the steel companies had accused the code writers of discriminating against steel in favor of wood. The former had objected to unit stresses, height and area limitations and numerous other such items. Stresses of 18,000 psi. for structural steel and 16,000 psi. for lightgage steel are too low, they claimed.

At the opening session of the BOCA annual meeting, Mayor O'Dwyer said city engineers had found 25 to 30 percent padding on bids for construction of hospitals and schools. He attributed this to uncertainties in future costs and labor efficiency and renewed his plea for a stabilization agreement of three or five years between the building trade unions and employers.

The mayor contended that absence of a stabilization agreement resulted in contracts including heavy contingency items that made costs prohibitive. Present construction costs, he said, were 145 percent over those of 1939 because of increased wages, material prices and financing expenses.

Padded bids denied

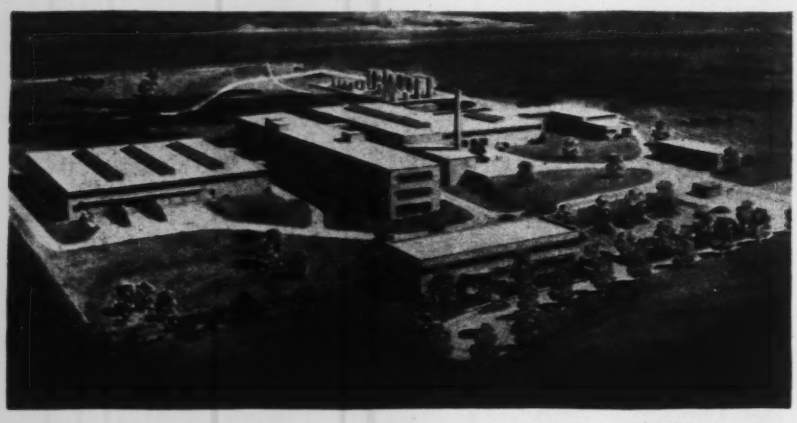
Exception was taken to the mayor's assertions by Joseph G. Fink, counsel for the Building Trades Employers Assn., at a luncheon given by the BTEA in honor of the BOCA.

"There is a sinister connotation in the suggestion of padding," Mr. Fink said. "We think that a contingency item on account of uncertain wages and uncertain productivity is a must. . . ."

He pointed out that labor could not be expected to fix wages for a long term unless certain that the cost of living would also be fixed. The BTEA now has an agreement with the Building and Construction Trades Council of New York, for a 2½-year period, covering more than 150,000 employees (*ENR*, Jan. 8, vol. p. 23). Under it, wages are pegged to the cost-of-living index for the city. Thus, Mr. Fink contended, "there is little room for contingency on account of wage increases or the more sinister term padding."

The BOCA elected Albert H. Baum, building commissioner of St. Louis, Mo., president; Joseph P. Wolff, building and safety engineering commissioner of Detroit, first vice president; and Arthur J. Benline, housing and building superintendent of Manhattan, New York City, second vice president. George H. Slenker, building inspector, Allentown, Pa., was reelected secretary and Arthur N. Rutherford, building inspector, West Hartford, Conn., treasurer.

The BOF nominated the following officers of the Board of Governors: chairman, Le Roy A. Petersen, president, Otis Elevator Co.; vice chairman, J. H. Thornley, president, Western Foundation Co.; secretary, Fred C. Bergeson, building inspector, Rock Island, Ill.; and treasurer, Loring Washburn, president, S. H. Pomeroy Co. Election will be by letter ballot.



PAINT PLANT—Planned for completion next summer on a 23-acre Raritan, N. J., site by the Socony-Vacuum Oil Co., Inc., this plant includes eight steel-frame buildings. Construction will be done by Walter Kidde Constructors, Inc., of New York. Buildings will include manufacturing space, warehouses, a research laboratory, garages, cafeteria and offices.

FOREIGN DEVELOPMENTS

Greece—In one year's operation, the American Mission for Aid to Greece assured the reclaiming of 340,000 acres of flooded land for agricultural use. Progress was made on this facet of the mission's many-sided program in the face of numerous difficulties and with the supervisory aid of only one American engineer —W. E. Corfitzen.

Land restored to farm operations lies in the Macedonian Plains of northern Greece and in the Peloponnese (southern) and central portions of the country. In the 1948 growing season, 100,000 acres in Macedonia were back in production, and only a little additional reconstruction remains to be done to bring back another 115,000 acres of fertile land. The reclamation operations in central and southern Greece are making 125,000 acres available for planting.

Progress in the twelve-month period is more remarkable when viewed in the light of the hard realities of a new undertaking in a foreign land. The first quarter of the year was required for analysis of the problem, including field surveys; the second, for placing of equipment and materials orders back home in the United States or elsewhere and for recruiting necessary personnel; the third, for meshing the various parts of the organization-personnel and equipment as it arrived. Only in the fourth quarter was the program really rolling and accomplishing its full quota of work.

This work had to be accomplished with the equivalent of $1,970,000 in Greek drachmae, realized by the Greek government from sale of consumer goods furnished to the destitute country by the American mission. The money went to pay Greek contractors and force-account labor. All civil service employees of the Greek Ministry of Public Works and its hydraulic branch—charged with the reclamation work—had to be paid out of regular government funds.

Single American supervisor

For the American mission, all the reclamation work was under the direction of W. E. Corfitzen, borrowed for this very purpose by the State Department from the Bureau of Reclamation. By agreement between the two governments—U. S. and Greek—he took a post in the Ministry of Public Works as Commissioner of Water Economy. His counterpart in the permanent organization is the Director of Water Economy —D. Papanikoloau, a top-flight engineer who had studied in Italy and served as a key man on the reclamation contract of The Foundation Co. in the 20's, when that American construction firm was building drainage systems in Macedonia. In the present program, the two supervising engineers—American and Greek—serve under a far-sighted Minister of Public Works, S. Nicolaides.

Footprints left by earlier American contractors are still clearly discernible in Greece, says Mr. Corfitzen. It is a tribute to the training given by their organizations that the engineering practices, maintenance work and construction operations of their former Greek employees are efficient and sound in all respects. In the same sense, it is a tribute to the intelligent and resourceful Greeks that they have been able to maintain, rebuild and keep in service through many years and several wars equipment that was brought to Greece in the 20's by American contractors such as Ulen & Co. and The Foundation Co. The Greeks care for a power shovel as if it were a watch, according to the Corfitzen account.

War caused drainage damage

Land was lost to agriculture in the valley plains of Macedonia during the war through the choking of drainage canals by blasted bridges, sunken dredges and interruption of maintenance. Stoppage of the drainage system raised the groundwater table to the level of the turf and made farming impossible. The first objective of the program was to open up the canals and get the land back in use raising crops.

This year—under ECA auspices—reclamation activities will have to spread out to many Greek islands.

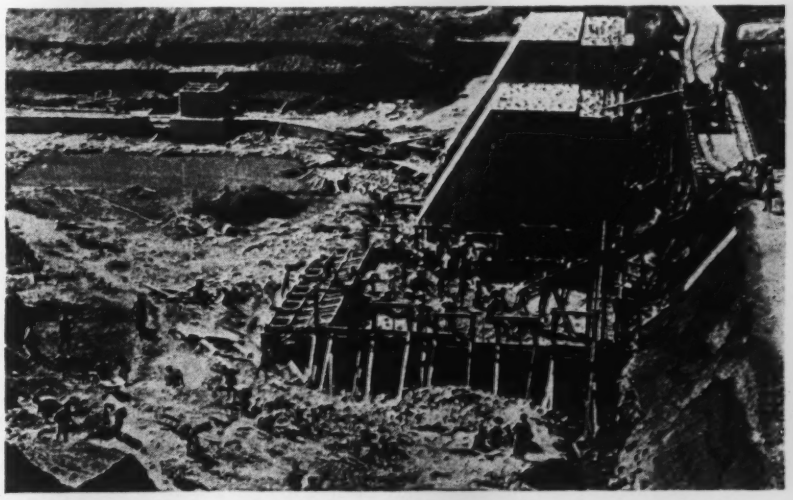
Quieting of the civil war waged by guerrillas in the mountains opens up prospects for wider reconstruction activities in Greece. The ECA will give early consideration to hydroelectric projects.

Industrial construction

Scotland—Planned to harness the waters of the River Shiva at Scotstown, Glasgow, the Glen Shiva hydro-electric project has been let to an Edinburgh contractor. Comprising two dams, the project will have a 45,000 kw. capacity and include over four miles of 10-ft. diameter tunnel. The larger of the two dams will be 2,250 ft. long and stand 130 ft. high.

Pakistan—Latest potential source of hydro-electric power for the Dominion of Pakistan to come under intensive study is the Kabul River which flows out of the Hindu Kush mountains near the famed Khyber Pass. Preliminary surveys indicate that a dam 20 miles northwest of the city of Peshawar would make it possible to electrify almost all of the north west frontier and West Punjab provinces.

Mexico—Puerto Vallarta, in Jalisco State on the Pacific coast is to be made into a luxurious tourist resort at a cost of $1,650,000 to be shared by the federal and state governments. Surveys have already begun.



WATER SUPPLY IN THE MAKING—Ruiru Dam in Nairobi, Africa, was started before the war as a concrete structure 60 ft. high. In the above photo, concrete has attained half its ultimate height.

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Huge volume of public-works projects proposed for New York City

Mayor reveals plans for financing construction of badly needed municipal improvements in 1949. Port rehabilitation and sewage-treatment projects get top listing

Forecasting great activity in port rehabilitation and sewage-treatment construction for New York City, Mayor William O'Dwyer certified the city's 1949 capital budget of $247,000,000 to the City Planning Commission last week.

In his message, the mayor disclosed that the Board of Estimate had unanimously accepted the $58,269,000 pier-rehabilitation plan prepared by the Department of Marine and Aviation and had decided to finance a $180 million sewage-plant program by assessment bonds. Other items included in the capital budget are $61,700,000 for new schools, $54,100,000 for rapid-transit improvements, $17,300,000 for hospitals and $16,000,000 for incinerators.

City to control piers

Controversy as to the method of financing badly-needed pier rehabilitation lent special interest to the announcement that the city will retain control of the piers, and advance $10,400,000 under the 1949 capital budget to start the work. Two other proposals —submitted by the Port of New York Authority and the World Trade Organization—had competed with the city-controlled method for developing the waterfront facilities.

As a matter of fact, the opposition sentiment is still optimistic that the mayor will recognize the deficiencies that they see in the city-ownership plan, and will act, as he has done in other cases, to bring about a reversal of the decision. Most of this sentiment favors the Port Authority plan.

The city plan includes construction of eleven new piers, sheds for three open piers and extensive modernization of old city-owned docks over a ten-year period.

The Port Authority pier plan proposes a $114,000,000 expenditure under a forty-year lease, but provides for six new steamship piers and modernization of 14 and rehabilitation of 56 docks during the first twelve years at an estimated cost of $36,000,000. The plan also includes construction of a $27,000,000 produce terminal.

The Port Authority offer provides for payment to New York City of all net revenues over debt service and required reserve until 1960 and thereafter payment of three-fourths of net revenues during a 50-year lease—a sum estimated at about $5,000,000 annually.

The World Trade Organization, created by the New York State legislature in 1946, proposes to invest $250 million for complete rehabilitation of New York's waterfront facilities. Under the initial stage it calls for an expenditure of $89,000,000 to build new piers and rehabilitate old ones in five years.

The over-all program consists of (1) Leasing of city-owned properties; (2) construction of a $60,000,000 market; (3) acquisition of privately-owned waterfront facilities; (4) development of a center for industrial exhibits to stimulate import and export trade; and (5) establishment of a "world trade house", or information center, to aid foreign businessmen.

The WTO proposes to finance the work by sale of its own revenue bonds and prior equity stock.

The decision to finance sewage-works projects by the assessment-bond method will lift these expenditures out of the capital budget and thus permit equally essential construction in other fields. Assessments for these projects will be charged to real estate on a city-wide basis. This practice was used in New York some years ago.

The initial stage of the sewage-treatment program will cost $80,000,000 and be completed in five years.

No mention was made in the mayor's message of sewer-rental financing, a possibility that has been studied for several years by the city. It is presumed that this proposition is politically inexpedient at a time when a mayoralty election is approaching.

UN begins construction on Secretariat building

Ground breaking ceremonies marking the beginning of construction on the $65,000,000 permanent United Nations headquarters, took place recently at the donated New York City site where the 39-story Secretariat building will be built (ENR, Aug. 19, p. 73).

Scheduled for 1950 completion are the Secretariat, the Security Council and the General Assembly buildings.

City expenditures to provide suitable approaches to the site, previously reported at an estimated $20,000,000, may possibly exceed $30,000,000, according to Lazarus Joseph, city controller.

Wide World Photo

HOLING-THROUGH the Brooklyn-Battery Tunnel. On Sept. 16 a light charge broke this small drift through five feet of rock separating the Manhattan and Brooklyn headings in one bore of New York's Brooklyn-Battery vehicular tunnel under the mouth of the East River. Omitting the pomp and official ceremony frequently attending such significant events, the Triborough Bridge Authority left this traditional job climax in the hands of the workmen, who, like those shown above, enthusiastically filed through and congratulated each other, then headed for the holing-through party that is part of the rite. This $77,000,000 project, begun in 1940, was interrupted by the War in 1942 and resumed at the end of 1945. Two contractors, the Geo. H. Flinn Corp. and Mason and Hanger Co., will complete the twin 9,117-ft. two-lane bores by 1950.

Start New York housing for 2,878 families

Construction will start soon on Pelham Parkway Houses, the 1,266-family veterans' apartment center in the Bronx, New York City. This is the city's first unsubsidized public housing project for veterans.

Architectural plans have also been filed for Gun Hill Houses, another of the projects in Mayor O'Dwyer's $200,000,000 program of public housing without cash subsidy. It is expected that bids for the foundations will be taken next month. These six 14-story buildings will occupy a site of eight acres on White Plains and Gun Hill roads.

Bids were taken Sept. 16 for the foundation and superstructure and other contracts for Eastchester Houses, also in the Bronx.

Thirteen projects, which will provide about 14,000 units, have been approved to date by the New York City Board of Estimate and include most of the program of 17,000 apartments to rent at about $17 per room per month.

The schedule for construction bids on other New York City housing projects is as follows: Governor Alfred E. Smith Houses, lower East Side, 1,940 families, Sept. 24; Todt Hill Houses, Staten Island, 504 families, Oct. 7; Albany Houses, Brooklyn, 829 families, Oct. 8; South Beach Houses, Staten Island, 422 families, Oct. 15; Glenwood Houses, Brooklyn, 1,197 families, Oct. 19; and Sheepshead Bay Houses, Brooklyn, 1,056 families, Oct. 26.

Coronado's water supply is endangered

The water supply for the some 20,000 people of Coronado, Calif., is running out with a dubious hope for solution of the problem pinned on a clause of a 1912 contract with the city of San Diego.

The contract recently was invoked by the California Water & Telephone Co., which supplies Coronado with approximately 4 mgd, when that utility was restrained by a Superior Court order from pumping water from Tia Juana River basin wells until the underground supply is replenished by rains. This cut off 2 mgd. Another 1 mgd comes from other CWT wells and the rest from the Otay reservoir owned by San Diego.

CWT's predecessor, Southern California Mountain Water Co., sold its Otay and Morena reservoirs to San Diego in 1912 with the provision that San Diego would furnish Coronado all the water it requested as long as it was available.

Modular coordination advances summarized

Results of a $1,500,000 research program on modular building design are summarized in a report, according to a recent announcement of the Office of Technical Services, Department of Commerce. New advances in "modular coordination" to achieve construction economies by establishing uniform size standards were developed during the research work by the Modular Service Association of Boston, Mass.

The magazine *Grid Lines*, published, as part of the research contract, is to be continued under sponsorship of the American Institute of Architects with cooperation of the Producers Council.

Copies of the research report entitled *Dimensional Coordination of Buildings, and Materials and Equipment, on the Modular System* may be obtained from the Office of Technical Services, Department of Commerce, Washington 25, D. C., at $2.50 per copy, checks or money orders to be made payable to the Treasurer of the United States.

MAJOR MEETINGS

Producers' Council, annual meeting, Hotel Commodore, New York City, Sept. 29-Oct. 1.

American Institute of Steel Construction, annual convention, Chateau Frontenac, Quebec, Can., Oct. 4-7.

Concrete Reinforcing Steel Institute, semi-annual meeting, Grove Park Inn, Asheville, N. C., Oct. 5-9.

American Society of Photogrammetry, semi-annual meeting, Benjamin Franklin Hotel, Philadelphia, Pa., Oct. 7-8.

Seabee Veterans of America, First national convention, La Salle Hotel, Chicago, Ill., Oct. 8-10.

American Society of Planning Officials, national planning conference, New Yorker Hotel, New York City, Oct. 11-13.

Institute of Traffic Engineers, annual meeting, Hotel Warwick, Philadelphia, Pa., Oct. 11-13.

American Society of Civil Engineers, fall meeting, Statler Hotel, Boston, Mass., Oct. 13-15.

American Public Works Association, public works congress and equipment show, Copley Plaza Hotel, Boston, Oct. 17-20.

Federation of Sewage Works Associations, with annual meeting **Michigan Sewage Works Association,** Hotel Statler, Detroit, Mich., Oct. 18-21.

National Safety Congress, Stevens Hotel, Chicago, Ill., Oct. 18-22.

Joint Meeting Four States and Western Pa. sections of A.W.W.A., Penn Sheraton Hotel, Philadelphia, Pa., Oct. 20.

Structural Engineers' Assn. of California, annual convention, Biltmore Hotel, Santa Barbara, Calif., Oct. 21-24.

American Welding Society, annual meeting, Bellevue-Stratford Hotel, Philadelphia, Pa. Week of Oct. 24.

ASCE and AGC to foster joint cooperative group

Executives of the American Society of Civil Engineers and the Associated General Contractors of America have announced recently the formation of a National Joint Cooperative Committee.

R. E. Dougherty and Dwight W. Winkleman, respective presidents of the two groups, stressed economical construction as the aim of the committee.

Among subjects to be studied with an eye toward recommending more economic procedures are: clear and definite specifications, full use of mechanized construction operations, clarity in bidding and awarding procedures, and college construction courses.

Three men will represent each organization and Edmund A. Prentis, of New York, will head the group.

Washington highway named for late H. C. Whitehurst

The partly completed K Street elevated highway in the District of Columbia has been named the "Whitehurst Freeway" in honor of the late director of highways, Capt. H. C. Whitehurst, who died Sept. 1 (*ENR* Sept. 9, p. 10), it has been announced by the commissioners of the district.

Brig. Gen. Gordon R. Young, engineer commissioner of the district, said Captain Whitehurst was responsible, more than any other man, for the magnificent system of bridges and highways of Washington.

The first link of the highway is being built from Rock Creek Park to Key Bridge as an elevated express route for Virginia-bound traffic. Second link will be construction of a depressed roadway from 27th Street to 21st Street under Washington Circle.

Solar heated house to be tested by Mass. scientist

Speaking before the recent meeting of the American Association for the Advancement of Science, Maria Telkes, of Massachusetts Institute of Technology, described the solar heat unit in her new home at Dover, Mass., in which she will spend next winter.

Her $20,000 home has a $3,000 solar unit which should cost nothing to operate and thus save an annual fuel bill, which is said to average $150 in the area.

Many solar heated houses have already been built in the United States, but most are farther south and some are provided with auxiliary heating units.

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MUNICIPAL AFFAIRS

Wide World Photo

The success of the Bankhead vehicular tunnel under the Mobile River ship channel at Mobile, Ala., to Blakely Island, on U. S. Highway 90 leading to Florida, is causing other southern cities to follow Mobile in tunneling under water crossings.

The Bankhead Tunnel cost $4,000,000. Since it was opened in February, 1941, more than 15,000,000 vehicles have traveled through it without accident. Palmer & Baker, Inc., Mobile, successors to the firm that designed this tunnel, has also designed similar tunnels at Houston and Galveston, Tex. The Houston project, already under construction, will cost $7,500,000. It will be a toll free, 3,400-ft. tunnel under the Houston ship channel. At Galveston bids are being taken on a mile-long crossing under Galveston Bay. The cost, including an artificial island and a 4,000-ft. trestle approach, will be about $17,000,000.

Plans are being prepared at New Orleans, La., for an $8,500,000 four-lane tunnel under the intracoastal waterway, and according to Hendrix Chandler of the Associated Press, Jacksonville, Fort Lauderdale and Miami, Fla., are also considering tunnels to solve their traffic problems. At Fort Lauderdale, the engineering firm in a preliminary report has recommended three tunnels—one at East Los Olas Boulevard, one at the federal highway under the New River, and the third at S.E. 17th Street under the Stranahan River.

Norfolk, Va., is also considering a tunnel beneath its ship channel.

Traffic and Streets

Among the week's developments in traffic control and street problems, principally having to do with parking, are the following:

In Akron, Ohio, it has been decided that the new viaduct across the Little Cuyahoga River valley, the second to connect the downtown section and North Hill, will be of concrete and steel construction. The new structure, estimated to cost $3,229,000, will be a unit of the city's superhighway system that eventually will cost more than $11,000,000.

The Boston Common Society and other civic groups are expected to appeal to the U. S. Supreme Court the decision of the Massachusetts Supreme Judicial Court that the proposed garage under Boston Common is legal. Meanwhile, Boston is asking bids on 2,000 additional parking meters.

Officials of Fort Wayne, Ind., estimate that a yearly income of $100,000 would be obtained from parking meters in the downtown section.

The Federal Land Bank in Springfield, Mass., is planning to provide parking space on the roof of a garage to be built next to the bank's building.

Preliminary plans on six street improvement projects at Richmond, Va., to cost over $1,000,000 have been presented to the city council.

Work has started on the first overpass of the Union Passenger Terminal project at New Orleans, La. It is said that, before grade separation, union station, street improvement and civic center projects have been completed, nearly $50,000,000 will have been invested in these developments.

The Greater Youngstown, Ohio, Area Foundation has proposed a 5-deck structure over the Erie R.R. tracks to provide parking for 10,000 automobiles in the business district.

A proposal has been made at Jacksonville, Fla., that a special committee be appointed to study the feasibility of an off-street parking area to be owned and operated by the city or on behalf of it.

Rubber Street

Akron, Ohio, rubber center of the world, is to have a "synthetic rubber" street. The city will resurface Exchange Street from Broadway to Five Points, with a mixture of crumbed synthetic rubber and asphalt black top. If the new "hot mix" combination lives up to expectations, a vast new field for the use of synthetic rubber as a paving material will be opened up, officials said.

Small sections of two city streets were paved with the material about a year ago. It has stood up so well that it will be given a thorough tryout on a main thoroughfare. Plans are to use the combination material in alternate stretches on both sides of the street, on level stretches, and hills. Goodyear Tire and Rubber Co. is supplying the synthetic rubber without cost to the city.

In crumb form, it will be taken to the mixing plant and combined with asphalt, at a temperature of about 170 degrees. Then the mixture is transported to the job to be rolled down on a new paving surface. Engineers say it gives a more nearly waterproof surface than regular black top applications; is more resilient, and therefore resists cracking in cold weather, and provides a longer-wearing surface and one that is more skid-resistant than regular surfaces.

The same idea is being tried out in England and the Netherlands at the present time.

Cement Repercussions

The critical shortage of cement has all but stopped city and state paving work in Michigan. More than 50 percent of State Highway Commission projects have ceased completely.

In Detroit, paving on more than 400 streets has been delayed as a result of the pinch. Officials estimate that some of this paving will be held up at least a year.

The attorney-general's office at Lansing has even considered condemning the output of all Michigan cement plants for state highway work. This proposal, however, was disapproved by the State Highway Commission.

A leading cement supplier in the Detroit area blamed the shortage on labor trouble in the plants and uncertainty resulting from the Supreme Court basing point decision. He added, however, that greatly increased demand in private building is a major cause, as it was during this same period last year.

Armand Viau, industrial commissioner of Quebec City, Que., says that

cement scarcity is acute in that district and he has urged public bodies and labor unions to recommend to the federal authorities duty-free import of American and Belgian cement to overcome the shortage.

Water Supply

Bids have been received by Tulsa, Okla., on the $10,000,000 Spavinaw Lake project calling for a second flow line conduit. The first pipe laying will be from the Mohawk water plant northeast to the west side of the Verdigris River, about eight miles, with another section to be laid from the Spavinaw Dam to a point just west of the Grand River. The Lock Joint Pipe Co. of East Orange, N. J., was the apparent low bidder on the pipe manufacturing at $7,275,014.

Durham, N. C., has called for bids on a waterworks expansion program expected to cost more than $1,000,000, while Greenville in South Carolina plans a $3,000,000 expansion and improvement program to increase capacity from 17,000,000 to 32,000,000 gpd.

The Board of Estimates of Baltimore, Md., is providing funds for the extension of water mains to new housing developments by transferring money to the Board of Water Supply from two other bureaus of the Department of Public Works.

A 20 percent increase in the water rate of Philadelphia, Pa., has been approved. Some $18,500,000 previously allocated for water works improvement is nearly exhausted so it was deemed necessary to obtain this additional revenue.

Texarkana, Ark.-Tex., is now owner of a $4,500,000 water system bought from the American Water Co., Inc. A joint utility board has been formed.

Enid, Okla., has approved a plan calling for deep wells in the Ames area to supply the city with water. The project is estimated to cost $3,623,000.

An investigation of the possibility of further softening of the water supply of Toledo, Ohio, has been ordered. Although the hardness was reduced 50 percent when the source was changed from the Maumee River to Lake Erie, the water still is too hard.

The 26 cities of southern California served by the Metropolitan Water District, and the district proper, are spending $47,000,000 for construction of distribution facilities for Colorado River water that will boost storage capacity by 513,500,000 gal., Julian Hinds, general manager and chief engineer of the district, reported.

San Diego which barely averted a critical water shortage by the completion of the 85 sec. ft. San Diego Aqueduct (*ENR* Mar. 6 vol. p. 362) in December of 1947, is faced with the possibility of another critical shortage by 1951. That was the warning given the San Diego County Water Authority directors recently by their chief engineer and general manager, J. L. Burkholder, as they adopted his recommendation to build a parallel line to double the present supply of Colorado River water.

Wide World Photo

AN UNDERPASS will carry New York's West Side Highway under Battery Park to connect with the East River Drive. The last link in the elevated section, now nearing completion, comes to grade before reaching the park, permitting access to this underpass or to the Battery-Brooklyn Tunnel, the first tube of which was holed through at 4.40 P. M. on Sept. 16.

Municipal Briefs

Cleveland, Ohio, has won a $525,000 verdict in the Cuyahoga County Common Pleas Court against the Cuyahoga Asphalt & Paving Co. for 1941 and 1942 street resurfacing which it was claimed was unsatisfactory, as contract specifications were alleged to have been ignored. The company will appeal.

A state public works department crew has begun test borings along the proposed 6,000-ft. high level bridge over the waterfront of Buffalo, N. Y. It is also reported that a state grant of $6,000,000 from grade crossing elimination funds has been made preparatory to the relocation of the N. Y. Central R.R. tracks in the downtown terrace district.

Resurfacing of 2,500,000 sq.yd. of worn-out paving in Baltimore, Md., by asphalt and bituminous concrete mixture is to cost the city about $3,750,000 this year, or about half the cost by former methods whereby the old surface was stripped off down to the base and new surface laid.

Several new regulations have been adopted at Durham, N. C. to enforce rigid adherence by builders to the city building code.

A board of examiners and appeals for the building code of Youngstown, Ohio, has been appointed. It is empowered to interpret the code, authorize alternate materials, and hear appeals from decisions of the building inspector.

Items in the proposed $7,725,000 program of public improvements for 1949 in Milwaukee, Wis., are an underground fire alarm system, sewers, lakefront work, and street widening.

A new town plan has been announced for Bar Harbor, Me., severely damaged by fire last October. It is designed to modernize the physical facilities of the community, preserve essential characteristics, and obliterate some of the long accumulating ugly features of the central village. Encouragement of the erection of substantial summer homes is a notable part of the comprehensive town plan, details of which were released by Chairman Dale J. Foley of the town planning board and Harland Bartholomew and Associates, city planners of St. Louis, Mo.

The Tacoma, Wash., city council has directed C. A. Erdahl, its public utilities commissioner, to proceed with preliminary design and cost estimates for construction of a hydroelectric dam at Mayfield on the Cowlitz River, in the hope that construction may start this year. The city may also construct a power dam at Mosay Rock further up the same river.

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Cement consumption leads production

(*Continued from p. 3*)

last year 8.4 million barrels were exported. Although shipments for the first five months of this year exceeded the same period last year, total 1948 exports are expected to be less than 8,000,000 bbl., as manufacturers concentrate on the domestic demand.

The Marshall Plan has had no effect on exports, Europe receiving an insignificant amount of American cement, and China not a large quantity as yet. Mexico, Venezuela and Brazil probably take half of the total exports, with another quarter going to our own territories and offshore bases, including the Philippines.

Consumer storage would help

Manufacturers point out that cement consumers could divert large quantities of this exported cement by providing their own storage facilities and purchasing cement in the early spring, say from February to April. It is during that period that cement companies, with their own bins full and desiring to keep production humming, yield to the pleas of their export departments and send hundreds of thousands of barrels out of the country.

Most experts doubt that the high foreign demand we are now experiencing represents a permanent condition, however. Foreign countries normally are exporters of cement, and they will resume this role as their war reconstruction advances and cement making machinery becomes available to them.

The consumption side of the cement shortage situation is thus a composite of high demand from construction for houses, dams, highways, bridges, airports and buildings, plus new demands from farmers and export. These new demands partly explain why there is a cement shortage in 1948 on a lesser physical volume of construction than in 1928 or 1929. The rest of the explanation lies in a new construction industry pattern in which cement is being used in structures that in the 1920's were built of steel, lumber and brick.

Biggest production ever

When one examines the other half of the situation that may explain the cement shortage, namely production, the facts are just as plain—and they don't add up to any more cement. Far from accepting any responsibility for the shortage, cement producers point with pride, not unmixed with some awe, at their production and shipment achievements. In 1928, '42 and '47, the previous boom years, they managed to ship 73, 74 and 77 per cent of their listed capacity, and considered that tops in view of the necessity of having some capacity margin to take care of breakdowns in equipment and the like. So far this year they are shipping cement at 88 per cent of capacity rate, and wondering how long the equipment can take it.

Considered in another way, allowing 15 per cent excess capacity—a usual figure—to take care of forced idleness from breakdowns, strikes, etc., the cement industry, which produced and shipped at 85 per cent of *effective* capacity in 1928, raised this figure to 93 per cent last year and is at a 100 per cent level this year. Shipments that reached 186,500,000 bbl. last year will approach 205,000,000 bbl. this year. The current rate of shipments indicates nearer 220,000,000 bbl., but this rate is bolstered by withdrawals from stocks, which must soon cease because of depletion.

Why production isn't greater

Against the charge that they have not increased capacity in accordance with the growth in demand, cement producers have two answers. One is that neither during the war nor since has it been possible to do as much as they would like in building and equipping new cement facilities because of the steel shortage. The other is that current demand is out of all proportion to normal, and that if sufficient capacity were built to handle it, a large part would lie idle at all other times.

A corollary to both these answers is that our present difficulties stem from regional rather than overall shortages in production capacity. Relatively small increases in total capacity, strategically placed, would be sufficient. Manufacturers point out that they are making these increases, as rapidly as equipment and material shortages permit, and that by the end of 1949 some 5,000,000 bbl. of additional production will be available. Even then, however, they point out that a single large dam or other project may turn a normally adequate supply of cement in a certain area into a shortage.

Some industry economists have figured that average annual production over the next 15 years cannot possibly exceed 150,000,000 bbl. Present listed capacity is 242,000,000 bbl., and taking off 15 per cent for contingencies still leaves an effective capacity of 205,000,000 bbl., well in excess of the average and reasonably sufficient for a boom year.

Other students of the industry—with not so much at stake as company economists—express doubts that the industry has not taken sufficient account of the new pattern of demand mentioned above—large construction volume plus greatly enlarged farm and other nonconstruction industry use. They also point to the increase in population to 150,000,000 by 1950, and recall that per capita consumption has run as high as 1.46 bbl. If increased farm use means anything it means larger per capita use, they argue, and therefore even 1.46 bbl. may be exceeded in the not distant future.

Investment capital hesitant

The net of the situation seems to be, however, that investment capital has not yet accepted such reasoning, for it has not come forth in abundance for new cement facilities. One important reason for this rests with high construction costs. It used to be that a new cement plant could be built for $2.50 to $3.00 per barrel. Now it is closer to $5. Moreover, the depreciated value of plant investment, as carried on the books of 27 of the leading cement companies, averages about $1.15 per barrel. A $5 a barrel plant would have to be powerfully efficient to compete with that.

Even without the cost consideration, investment in new plant is not encouraged by the Supreme Court basing point decision. If the decision sticks—and freight absorption to achieve a common delivered-price pattern in a given region is not permissible—the place to locate plants is near consuming centers rather than near the best raw materials. If the decision should be repealed, new plants should be where production costs are lowest. Uncertainty as to proper location is thus a deterrent to new plant building.

Producers report problems

Further light was thrown recently on the question of cement availability by a questionnaire of the National Ready Mixed Concrete Association (whose members use about 20 per cent of all cement produced), addressed to the presidents of all of the producing companies in the country. The answers, briefed by Vincent Ahearn the executive secretary of the association, are informative and revealing in many respects, but are strictly bearish on any immediate lessening of the shortage. "There is not enough cement to go around, and there is no prospect that there will be any abatement of this problem in the rest of 1948" is the way the presidents' replies summarize.

Other facts elicited from the sheaf of letters are (1) that lack of railroad

transportation is not the principal problem in any area, despite the fact that the roads need to increase their ownership of covered hopper cars by 50 per cent over the present 15,000 if the trend toward bulk cement sales continues; (2) that shortage of cars is locally troublesome in the Southeast and Southwest and in some smaller areas where buyers insist on keeping them for storage, paying demurrage rather than releasing them promptly; and (3) that there is no discernible shift from rail to truck or water transportation, despite one or two spectacular examples of the use of cement-delivery trucks by individual plants.

With respect to the Supreme Court decision on basing point selling, the presidents are agreed that it adds to the inherent difficulties in the cement shortage situation. Moreover they do not see it as stimulating any quick increase in capacity in line with the theory that new plants will spring up all over the country to supply local markets. Even if raw materials in sufficient quantity and quality could be found to locate more cement plants (and this is doubtful) they say that the necessary equipment and parts could not be obtained for any great plant building program. Even if they could, the present cost of building is too high.

In conclusion . . .

The short term conclusion from *News-Record's* survey then is that more cement production in the near future is definitely out of the picture, and, with stocks on hand at a dangerously low level, maintenance of even present shipping volume is not a certainty. For next year, new plants and improvements to existing ones should make it possible to turn out about 5 per cent more cement than this year.

Looking farther into the future, the answer to the question as to whether or not a permanent change has occurred in the type and magnitude of the cement market will lagely direct the course of development. If the current pattern should persist, with construction needs growing alongside increasing demands from other sources, then the cement producer—and the construction consumer—have a difficult time ahead. If, on the other hand, we are presently experiencing only a normal boom and a postwar adjustment among scarce materials, then the cement supply picture over a period of years is more rosy.

The producers have staked their claim on the latter possibility. When the boom abates they look again to having more cement production capacity than can be utilized.

Oregon engineering employes unite

The organization of the Association of Engineering Employes of Oregon has been perfected for the announced purpose of seeking better working conditions and salaries on a par with those paid in other Pacific Coast states, particularly California.

The new organization starts with a membership of 140, all employes of the Oregon State Highway Department. Its officer pointed out that since the end of the war Oregon has obtained few of its own state engineering school graduates because of more attractive offers elsewhere.

The word "public" was purposely omitted from the name of the organization because it was thought it may later be decided to include all engineering employes. For the present, however, membership is limited to employes working under the state's civil service act in any classified engineering activity.

At its organization meeting at Salem, E. G. Rickets, Salem, was named president; Forrest Cooper, Roseburg, first vice-president; Joe Skelton, Portland, second vice-president, and Claude Pfifer, Salem, secretary-treasurer.

Washington state may own both bridge and ferries

Possibility that the Washington State Toll Bridge Authority would enter the ferry business became a strong probability recently when stockholders of the Puget Sound Navigation Co. at Seattle, Wash., voted to sell their Black Ball ferries and facilities to the state for $5,975,000.

The agreement gives the state 90 days to raise the money through sale of revenue bonds. Bids for the bond issue, expected to approximate $10,500,000, will be called shortly after Oct. 1, when the authority will open proposals for construction of a $1,500,000 bridge across Agate Pass. Bids for the bridge, completion of which will make possible the consolidation of several ferry routes, will be a factor in determining the amount of the bond issue, which in addition to the ferry purchase and bridge items, will include $500,000 for a new terminal on Bainbridge Island, and other funds for operation and maintenance.

Several interests oppose Santee power plans

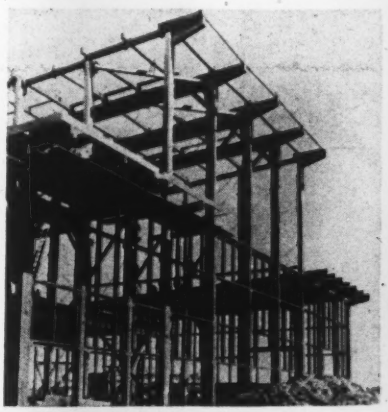
Proposal of hydro-electric dams, flood control and navigation programs on the Santee watershed brought forth strong opposition at a hearing held recently, in Columbia, S. C., by the U. S. Corps of Engineers.

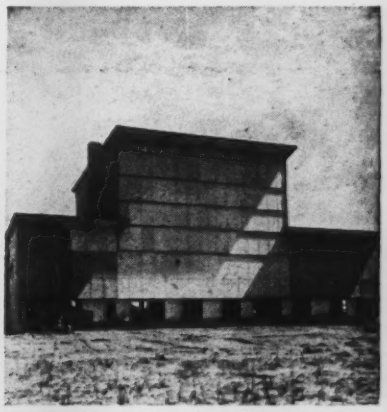
Private and public power interests, railroads, and county and city governments expressed divergent views on the proposed projects, which are under study. Report of the hearings will be made to the division engineer in Atlanta and later presented to Congress.

Strong opposition was expressed to the proposed northernmost Santee-Cooper hydro-electric project. Most of the opposition was due to fear of the loss of timber and farm lands.

S. C. McMeekin, president of South Carolina Electric and Gas Co., pointed out that a Columbia re-regulating dam would create a "flood hazard" rather than provide flood control.

Railroad interests protested the rerouting of 60 miles of track.





ANTENNA TEST BUILDING completed this month for General Electric Co. at Syracuse, N. Y., will house experimental radar equipment. Built of laminated timber by the Taylor Construction Co. of Syracuse, the structure is 60 ft. high and covers a 7,800 sq.ft.-area.

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MEN AND JOBS

Engineers William S. Kelton and Paul Williams of Seattle, Wash., have dissolved their partnership, Kelton to continue in the field of structural engineering under the name of William S. Kelton & Co., and Williams to manage the American Engineering Co., specializing in surveying and sewer and waterworks engineering.

Murray N. Shelton, city engineer of Dunkirk, N. Y., has resigned to enter private practice. Assistant Engineer **Harold T. Stumpf** was appointed acting city engineer until next January 1.

Maj. D. B. Dixon has been appointed assistant to the district engineer of the Corps of Engineers at New Orleans, La. He entered the military service in 1942, spent 14 months in the European Theater as an engineering and operations officer of the 928th Engineering Aviation Regiment and 10 months in the South Pacific, completing his overseas service on Okinawa. He was awarded the Bronze Star and the Meritorious Service Award.

Minneapolis Star photo

On his last day as Minneapolis city engineer, Fred Paul (seated) was paid farewells by many friends and associates. Among them were representatives from the Minneapolis Chamber of Commerce who came in to tell him what they thought of his fine public service and to present him with a leather correspondence case inscribed to Paul "for distinguished service." The delegation was headed by Russell C. Duncan, president of the Minneapolis Chamber of Commerce and included Harlan Nygaard, chairman of the Chamber of Commerce traffic committee; D. H. Timmerman, director of civil affairs for the Chamber of Commerce and Hugo Erickson, assistant city engineer, who succeeds Paul.

At the Ohio Conference on Sewage Treatment which met recently in Dayton, left to right, George S. Russell, president of the Federation of Sewage Works Associations enjoys a good story with Earl F. Witter, incoming chairman, G. A. Hall, secretary-treasurer; and L. B. Barnes, outgoing chairman.

Col. John L. Person is succeeding Col. B. B. Talley as U. S. district engineer at Louisville, Ky. A 1929 West Point graduate, he also studied at MIT. He went to Europe in October, 1943. The pipe lines which carried oil to the battle fronts were built by Colonel Person and his associates. He was chief of construction and deputy chief of engineers in France. He also was engineer of the Western Base Section.

Melvin Fiss, assistant town engineer of Lake, Wis., has been appointed superintendent of water works to replace Eugene Voelker, resigned.

James B. Wilson, City works director of Louisville, Ky., is retiring to give his whole time to house construction work.

C. Coykendall has resigned as administrative engineer of the Iowa State Highway Commission. Except for three brief periods, he has been with the commission since its organization in 1913. He served for one year as county engineer in Polk County. Later he left the commission for a three-year period during which he was employed by the Empire Construction Co. and the Des Moines Asphalt Paving Co., and in 1942 and 1943 he served as construction engineer for Lytle and Greene of Sioux City on the Alaska Highway. He will be

Appointment of Lieut. Col. Paul H. Symbol as assistant to Col. L. H. Hewitt, district engineer of the Seattle district, Corps of Engineers, is announced. He was commissioned a second lieutenant in the Officers Reserve Corps upon graduation from Washington State College in 1939. He goes to Seattle from Cornell University where he has been doing graduate work. He had over 3½ years of overseas duty, and was assigned to construction work on the Alcan and Canol projects in 1942 and transferred to the European Theater in 1944 where he commanded the 35th Engineer Combat Battalion.

succeeded at the highway commission offices in Ames, Ia., by **John Butter,** present district engineer at Council Bluffs, who has been with the highway commission since 1919. **R. E. Merrill,** assistant engineer with the commission's administrative department will succeed Butter at Council Bluffs.

Two veteran officials of the U. S. Engineers at Mobile, Ala., have retired. They are **Fourney F. Gatlin,** 44 years in the service, and **Mrs. Annie G. Turner,** 30 years. Gatlin was head of the river division and Mrs. Turner since 1941 has been chief of the communications, files and records section.

Anning F. Surré has joined Intercontinental Hotels Corp. to co-ordinate construction for the company's $80,000,000 program of eleven new hotels in Latin America. Surré, formerly engineering supervisor for Nelson Rockefeller's International Basic Economy Corp. is now in Caracas, Venezuela, where the 400-room Hotel Tamanaco will be built.

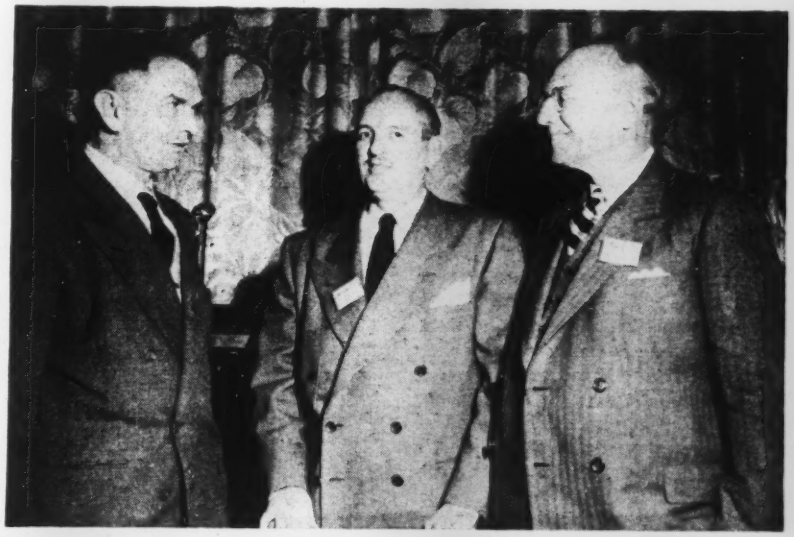
Educated at Western Reserve University and Case Institute of Technology, he joined the Austin Company of Cleveland, and spent three years in the Soviet Union on the $100,000,000 replica of the Ford Motor Co.'s River Rouge plant. He helped solve the many problems of the city and plant layout, including the creation of a city for 100,000 people.

Frederick H. Warren, chief, Production Facilities Control Branch, Engineering Division, United States Atomic Energy Commission, has been appointed chief of the Engineering-Construction Branch, Engineering Division. From March, 1946, until his appointment with the commission, Mr. Warren was assistant director, Office of Defense Plants, Reconstruction Finance Corporation. His war service record included active military duty with the Chief of Engineer's office, the War Production Board, and the Army Service Forces. He was also executive officer and deputy port commander of the Los Angeles Port of Embarkation.

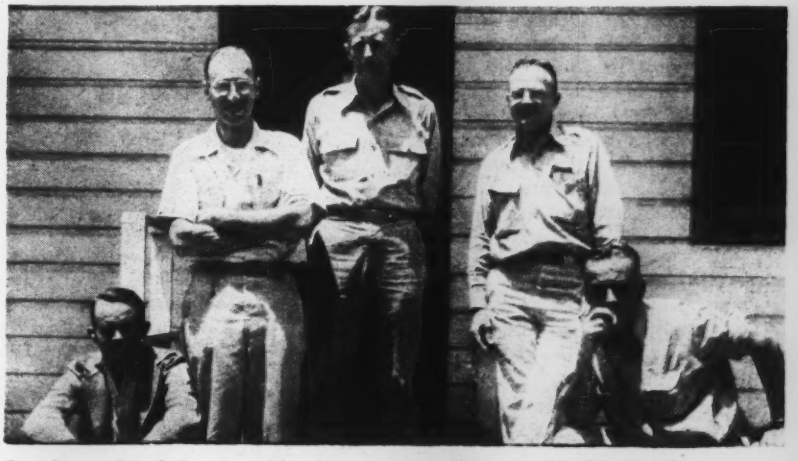
Osborn W. Briden has been made assistant chief of the engineering division of the Rural Electrification Administration of the U. S. Department of Agriculture. He joined REA in 1937.

Capt. Paul J. Halloran, (CEC) U. S. Navy, recently was elected vice-president of Foley Brothers, Inc., engineering construction firm of Pleasantville, N. Y. A graduate of Thayer School of Engineering at Dartmouth, during his 27 years with the Navy he has had under his charge several important construction projects for the Bureau of Yards & Docks. During the war he administered the construction of extensive dry dock and other heavy construction projects at the naval bases at Norfolk, Va., and Newport, R. I. He commanded the assault Seabees in the Marianas campaign and served as construction officer on the staff of the Commanding General (Marine) 5th Amphibious Corps, and later organized and headed the 6th Naval Construction Brigade assigned the task of constructing the largest airdromes for B-29 operations.

William D. Shannon, civil engineer, who accepted the position of King County Engineer at Seattle, Wash., on April 26 with the understanding he could serve for only three months, has resigned to return to his private practice.



Featured speakers at the banquet of the California Section, AWWA, meeting held recently in San Jose were Randal F. Dickey (left), chairman of the California Assembly Interim Committee on Water Pollution, and N. T. Veatch (right), AWWA president. H. Arthur Price (center), presided.



Caught at lunchtime outside the project office of the District Engineer at Allatoona Dam near Cartersville, Ga., are seen left to right: Thomas L. Hightower, assistant resident engineer; B. M. Nachman, chief of the engineering section; Charles A. Jackson, resident engineer; Walter Knox, office engineer; and John S. Webster, assistant resident engineer.

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ENGINEERING SCHOOLS

Concrete, welding and 4-wheel drive research—Construction methods course at Michigan—Equipment in operation

Creation of a council to carry out studies and experimental research in reinforced concrete, under sponsorship of the Engineering Foundation, and to interpret the results in the form of a code for the design of concrete structures, has been announced by A B. Kinzel, chairman. Such a code may permit the use of reinforced concrete in longer span structures than now considered possible and should eliminate much of the uncertainty in design. The research will be undertaken with approval of The American Society of Civil Engineers, one of the four engineering societies that established the foundation.

In working with concrete, Mr. Kinzel pointed out, the engineer is dealing with a material in which deformation is not proportional to the stress. In the past, concrete and steel have been combined and the design was based on the incorrect assumption that the strain in the concrete is, as in steel, proportional to the stress.

The Council on Research in Reinforced Concrete is composed of Robert Blanks, director of research, bureau of Reclamation, Denver Col., chairman; Jewell M. Garrelts, Columbia University, secretary; Clyde T. Morris, Ohio State University; Frank E. Richart, University of Illinois; F. R. Smith, chairman of the committee on masonry, American Railway Engineering Association; Raymond Archibald, chairman, bridge specification committee, American Association of State Highway Officials; Albert E. Cummings, research engineer, Raymond Concrete Pile Co., Arthur J. Boase, Portland Cement Association; and Harold D. Jolly, chairman, engineering practice committee, Reinforcing Steel Institute.

As part of its experimental program the Four Wheel Drive Auto Co. is sponsoring a research project by the college of engineering of the University of Wisconsin. It has granted $65,000 for this project. Under laboratory conditions university research men are studying the advantages of the 4-wheel drive, evaluating them and seeking ways in which they may be realized more fully.

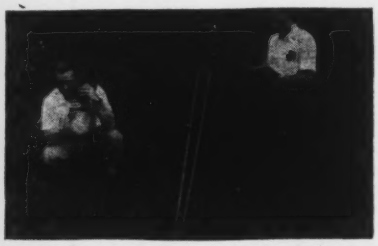
A five-year project for the study of welded continuous frames applicable to building and bridge construction has been assigned to the Fritz Engineering Laboratory of Lehigh University. The study is being sponsored by the Welding Research Council, the American Institute of Steel Construction, and the U. S. Navy Office of Naval Research. The Column Research Council is also cooperating in a consulting capacity.

An outgrowth and intensification of previous Fritz Engineering Laboratory testing programs, the new program, titled, "Ultimate Strength of Welded Continuous Frames," will be under the direction of Bruce G. Johnston, director of the laboratory. Lynn Beedle, research engineer, will serve in that capacity for the project and will be aided by C. H. Yang, Jan Ruzek, and C. H. Chen, research assistants.

Earlier testing programs at Fritz Laboratory have suggested the possibilities of greater strength in welded frames of buildings and bridges than is indicated in present design formulas. The intensified program aims to determine the basic behavior of beams, columns, and welded frames and to develop design procedures for continuous welded frames applicable to building and bridge construction.

Construction Methods

The civil engineering department of the college of engineering at the University of Michigan will offer an undergraduate option in the construction field. The course is designed to give special training in construction methods, cost analysis, estimating and accounting for civil engineering students interested in construction and contracting work. The department will also offer a graduate program in construction engineering leading to the civil engineering degree.



G. R. Shaw, head of a Rensselaer Polytechnic Institute field survey group of 100 in the Green Mountains of Vermont, is shown operating a "handie-talkie" in reporting data taken by a student with a one-second Swiss theodolite. Professor Shaw says: "It helped keep mapping and tabulation abreast of field work. Frequently the tabulators would spot an error directly after it had been committed. We were able then to call the field crew, ask for a correct reading, and embody the data into the record at once."

Engineering Exhibition

An exhibition of late developments in construction equipment and machinery in actual operation will be given at the University of Mississippi, Oct. 7-9, at a meeting of the Mid-South Section of the American Society of Civil Engineers, which Dean L. H. Johnson is organizing. Dwight W. Winkelman of Syracuse, N. Y., president of the Associated General Contractors of America and of the D. W. Winkelman Construction Co. will be a speaker.

Fred H. Kellogg, chairman of the department of civil engineering, sponsor of the exhibition, said that the world's most powerful tractor, equipped with the counterpart of the fluid drive in the automobile, will be shown. Other machines on display will be the mechanized successor to the wheelbarrow, a "portable filling station" equipped to re-fuel, oil, and grease all mobile machinery in the field; a portable machine shop, and new developments in welding, as well as the latest models of various standard construction machines. It is planned to feature time and motion studies on each unit in operation.

Big Registration

Students registered for the fall term at New York University college of engineering total 1594 as against last year's figure of 1522. The registration for the 1948-49 fall term is made up of 320 freshmen, 405 sophomores, 460 juniors, and 409 seniors, compared with the 1947-48 fall term enrollment of 333 freshmen, 368 sophomores, 411 juniors, and 410 seniors. The number of veterans entering as freshmen is decreasing.

Honors at Iowa

Iowa State College of Agriculture and Mechanic Arts has conferred special honors upon two of its distinguished graduates and eminent engineers. The degree of Doctor of Engineering, honoris causa, was granted to Anson Marston, dean emeritus of the Division of Engineering. The Marston Medal was awarded to Roy W. Crum, an engineering alumnus in recognition of outstanding work in engineering.

Brother J. Albert Wehrle has been named the new dean of the college of engineering at the University of Dayton, Ohio. He has had extensive teaching experience including work on the teaching staff of the Army Specialized Training program.

OBITUARY

William J. Lynch, 59, president of the large construction company in Chicago bearing his name, died Sept. 13. He was a member of the Chicago Housing Authority and of the Chicago Plan Commission. He was also a director and a past president of the Builders Association, and chairman of the joint conference board of the Building Construction Employers Association and the Building Trades Council.

Fred W. Springer, 54, a staff engineer with the J. G. White Engineering Corp., New York, died Sept. 13 in Frederick, Md. A graduate of Rose Polytechnic Institute, Terre Haute, Ind., in 1918, he later directed field engineering for several large companies in the Midwest. For the last seven years he was project manager for the White corporation engaged in foreign and domestic work.

T. Yale Hobart, sanitary engineer of Buffalo, N. Y., formerly employed by the Buffalo Sewer Authority, died Sept. 10. He was graduated as a civil engineer from the University of Michigan. He joined the Resettlement Administration in Ithaca, N. Y., in 1937. With the Corps of Engineers in Washington in 1940, he had charge of setting up sanitation systems for various Army camps in the southern states.

L. S. Austin, 57, civil engineer with the Woodward Iron Co. for many years, died at Birmingham, Ala., Sept. 9.

James F. Russell, 34, of Charlotte, N. C., project manager for the V. P. Loftis Construction Co. of Charlotte on the construction of a municipal dam project at Oxford, N. C., was killed Sept. 9 when struck by the bucket of a crane. He was a graduate of Clemson College.

Arthur A. Soderman, 57, southern California construction engineer who supervised the building of the basic magnesium plant at Las Vegas, Nev., died Aug. 31 in Los Angeles. He supervised construction of Camp Callam near San Diego, the Bakersfield Reservoir and several major oil and gas pipelines.

Ernest V. Smith, 53, resident engineer for the North Dakota highway department, and formerly also an engineer on highway projects in South Dakota and Iowa, died in Fargo, N. D., recently.

Frederick O. Nelson, 68, District 10 highway engineer in Minnesota from 1920 to his retirement in 1945 died recently in Montevideo, Minn.

B. C. Wooley, 80, former county engineer of Plymouth County, Iowa, died recently at Le Mars, Iowa.

Donald J. MacFadyen, 42, a partner in the Peterson-MacFadyen Construction Co., died in Little Rock, Ark., Sept. 10. Following his graduation from M.I.T., he was construction engineer for the Dwight W. Morrow estate and others.

E. W. Grannis, 50, of Fayetteville, N. C., North Carolina building contractor, was killed Sept. 11 when a plane in which he was returning to Fayetteville from Tennessee crashed and burned near Clarkton, N. C. He had been directing construction on the Santee-Cooper Reservoir in South Carolina. During the war he helped build Camp Davis and Seymour Johnson Air Force Base in North Carolina.

George T. Gilman, 46, of Norwalk, Conn., a partner in the New York firm of Moran, Proctor, Freeman & Mueser, consulting engineers, who had charge of the foundation work for many skyscrapers and large bridges, died Sept. 18. A civil engineering graduate of M.I.T., he became a junior engineer with the Illinois State Highway Commission and afterwards he went with the U. S. Coast and Geodetic survey, and joined the Moran concern in 1928.

Clifford L. Landmesser, 64, engineer in the bureau of surveys of the department of public works, Newark, N. J., for 43 years, died Sept. 18. He was a graduate of Newark Technical School, now the Newark College of Engineering.

Fred Brewer, 67, city engineer in Hubbard, Ohio, for 25 years, died in that city Sept. 5.

Edwin Bugler, civil engineer who retired in 1940, died at Cheshire, Conn., Sept. 12. After working for the New Haven R. R., the Boston Terminal Co., and the Foundation Co., Mr. Bugler established his own firm for consulting engineering on railroad, water power and foundation work.

CONSTRUCTION ACTIVITY

CONTRACT VOLUME

Continental U. S. Only (Thousands of Dollars)

	Week of Sept. 23 1948	Cumulative 1948 (39 wks.)	Cumulative 1947 (39 wks.)
Federal	$20,372	$736,823	$493,114
State & Mun.	37,922	1,951,354	1,292,975
Total Public.	$58,294	$2,688,177	$1,786,089
Total Private	42,009	2,456,481	2,320,313
U. S. Total..	**$100,303**	**$5,144,658**	**$4,106,402**

WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

Dollar Volume (Thousands)

Type of Work	This Week	Cumulative 1948 (39 wks.)	Cumulative 1947 (39 wks.)
Waterworks ...	$2,433	$160,717	$82,174
Sewerage	4,681	166,599	103,963
Bridges	4,533	212,572	132,364
Highways	16,598	777,484	609,727
Earthwork, Waterways	6,613	386,077	231,204
Buildings, Public	20,071	810,996	430,085
Industrial ...	8,236	711,212	651,541
Commercial ..	26,777	1,419,982	1,343,699
Unclassified ...	10,361	499,019	521,645

NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1948 (39 wks.)	Cumulative 1947 (39 wks.)
NON-FEDERAL	$3,515,436	$1,700,242
Corporate Securities	1,703,748	605,885
State and Municipal	1,319,399	864,646
U. N. Building Loan	65,000	.....
Fed. Aid Highway.	427,289	247,711
FEDERAL	1,558,932	818,729
Total Capital	**$5,074,368**	**$2,518,971**

As Reported this week to... *Engineering News-Record*

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost..	Sept.'48	476.80	229.20
Building Cost	Sept.'48	356.70	192.82
Volume	Aug.'48	254	111

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What to look for in the

(OR HOW TO BE YOUR OW

"An insurance policy," said Mr. Friendly, "is a thing of beauty!

"The type is fine and it's full of *whereas's, whereas's* and *whereas's!*

"The trouble is . . . few people read 'em . . .

"So what happens? . . .You take out a fire policy. Then along comes a fire and you learn too late that 'whereas your construction job was protected, the building material was not' . . . Whereas you're out of luck!

"To help you, American Mutual has developed the 'American Plan' . . . a simple, easy-to-understand guide complete protection.

"We'll send it to you free of charge, and we won't close an agent . . . not unless you ask for one.

"If you take out a policy, we believe you should ha *simple* description of the protection you're buying . . . we'll gladly supply that too!

"There are other things to consider . . . like the op

AMERICAN MUTUAL ... *the first American liability insurance company*

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